Environmental Protection
Omaha, NE

April 28, 2004

Mr. Kenneth V. Herstowski, P.E.
USEPA
RCRA Corrective Action & Permits Branch
Air, RCRA and Toxics Division
901 North 5th Street
Kansas City, KS 66101

Dear Mr. Herstowski:

Please refer to the Administrative Order on Consent (the Order) for the Omaha, Nebraska Shops of the Union Pacific Railroad Company. More specifically, the site is described as 9th and Cass Streets, Omaha, Nebraska, RCRA I.D. No. NED000829754.

Per Paragraph 35.d. in Section VII, Work To Be Performed, of the Order, I am hereby transmitting to you three copies of the draft Corrective Measures Completion Report Operable Unit No. 1. The report was prepared by URS and is dated April 2004. Please review the draft report and provide me with your comments for incorporation into the final report.

If you wish to discuss any aspect of the work please contact me at (402) 271-3675 or at jmcdermo@up.com.

Yours truly,

Jeffrey D. McDermott

Jeffrey D. McDermott, P.E.
Mgr. Environmental Site Remediation

Environmental Management Group

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DRAFT

CORRECTIVE MEASURES COMPLETION REPORT OPERABLE UNIT NO. 1 (OU1)

Omaha Shops

Prepared for
Union Pacific Railroad Company
Omaha, Nebraska

UNION PACIFIC

ENVIRONMENTAL MANAGEMENT

April 2004

URS

12120 Shamrock Plaza, Suite 300
Omaha, Nebraska 68154

CORRECTIVE MEASURES COMPLETION REPORT
OPERABLE UNIT NO. 1

UNION PACIFIC RAILROAD
OMAHA SHOPS

Union Pacific Railroad Company
1416 Dodge Street
Omaha, Nebraska 68179

CERTIFICATION

"I certify that this document and all attachments hereto were prepared under my direction or supervision. To the best of my knowledge, information and belief, the information submitted is true, accurate and complete. I am aware that there are criminal penalties for knowingly providing false information."

Signature: Jeffrey D. McDermott

Name: Jeffrey D. McDermott

Title: Mgr. Environmental Site Remediation

Date: 04/28/2004

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CFR	Code of Federal Regulations
CMC	Corrective Measures Completion
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
mg/kg	milligrams per kilogram (parts per million)
NDEQ	Nebraska Department of Environmental Quality
O&M	Operation and Maintenance
Order	Administrative Order on Consent
OU1	Operable Unit No. 1
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
UPRR	Union Pacific Railroad Company
URSGWC	URS Greiner Woodward Clyde
URS	URS Corporation
USEPA	U.S. Environmental Protection Agency
W-C	Woodward-Clyde Consultants

1.1 UPRR OMAHA SHOPS LOCATION AND BACKGROUND INFORMATION

The Union Pacific Railroad (UPRR) Omaha Shops are located at 9th and Webster Streets in Omaha, Nebraska (North 41°15' 58" latitude, West 95° 55' 40" longitude). The legal description of the facility is Township 15 North, Range 13 East, Section 22. The Omaha Shops encompass approximately 184 acres located north of downtown Omaha, just west of the Missouri River in the Missouri River floodplain (Figure 1-1)

The Omaha Shops included various buildings and production support areas, each having a function in past operations of the facility. The Omaha Shops were in operation for approximately 100 years, with principal functions as a railroad fueling facility, repair shop, paint shop, and car body repair shop for UPRR's locomotive and car fleet.

UPRR used steam engines from the 1860s until the mid-1950s. The original steam engines were fueled by burning wood, coal, fuel oil, and petroleum-based fuel. In the mid-1950s, diesel power became the predominant source of power for train locomotives. During that time, the entire facility was converted from handling steam engines to diesel engines.

From the 1950s to 1988, the site was a major overhaul and maintenance facility for UPRR. In 1988, most of the operations, except the print shop and the car shop, moved to Little Rock, Arkansas. After the operations were moved in 1988, facility demolition began. Specific operations history for Operable Unit 1 (OU1) is presented in the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report (URSGWC 1999).

The Omaha Shops are the subject of a United States Environmental Protection Agency (USEPA) Administrative Order on Consent (Order) under Section 3008(h) of RCRA. The Order requires UPRR to complete a Corrective Measure at OU1. The OU1 site includes the surface soils above the normal high water table within the portion of the Omaha Shops that has been acquired by the City of Omaha for the development of a public-use building project (Figure 1-2).

1.2 PURPOSE

The purpose of this Corrective Measure Completion (CMC) Report is to present information that documents how the corrective measure objectives and corrective measure completion criteria have been satisfied for OU1. The information presented in this report provides justification to cease the corrective measure monitoring.

1.3 REPORT ORGANIZATION

This report is organized into the following sections:

Section 1 – Introduction and Purpose: Describes the UPRR Omaha Shops, purpose of the CMC Report, and report organization.

Section 2 – Corrective Measure Synopsis: Provides an overview of the corrective measure.

Section 3 -- Corrective Measure Completion Criteria: Discusses the process and criteria for determining when the corrective measure and the maintenance and monitoring may cease.

Section 4 -- Summary of Corrective Measure Completion: Discusses the results of the testing and monitoring during the corrective measure and compares the corrective measure confirmatory results to the corrective measure completion criteria.

Section 5 -- Summary of Work Accomplishments: Describes the performance levels achieved, the volumes removed and disposed, and the nature and final disposition of the waste.

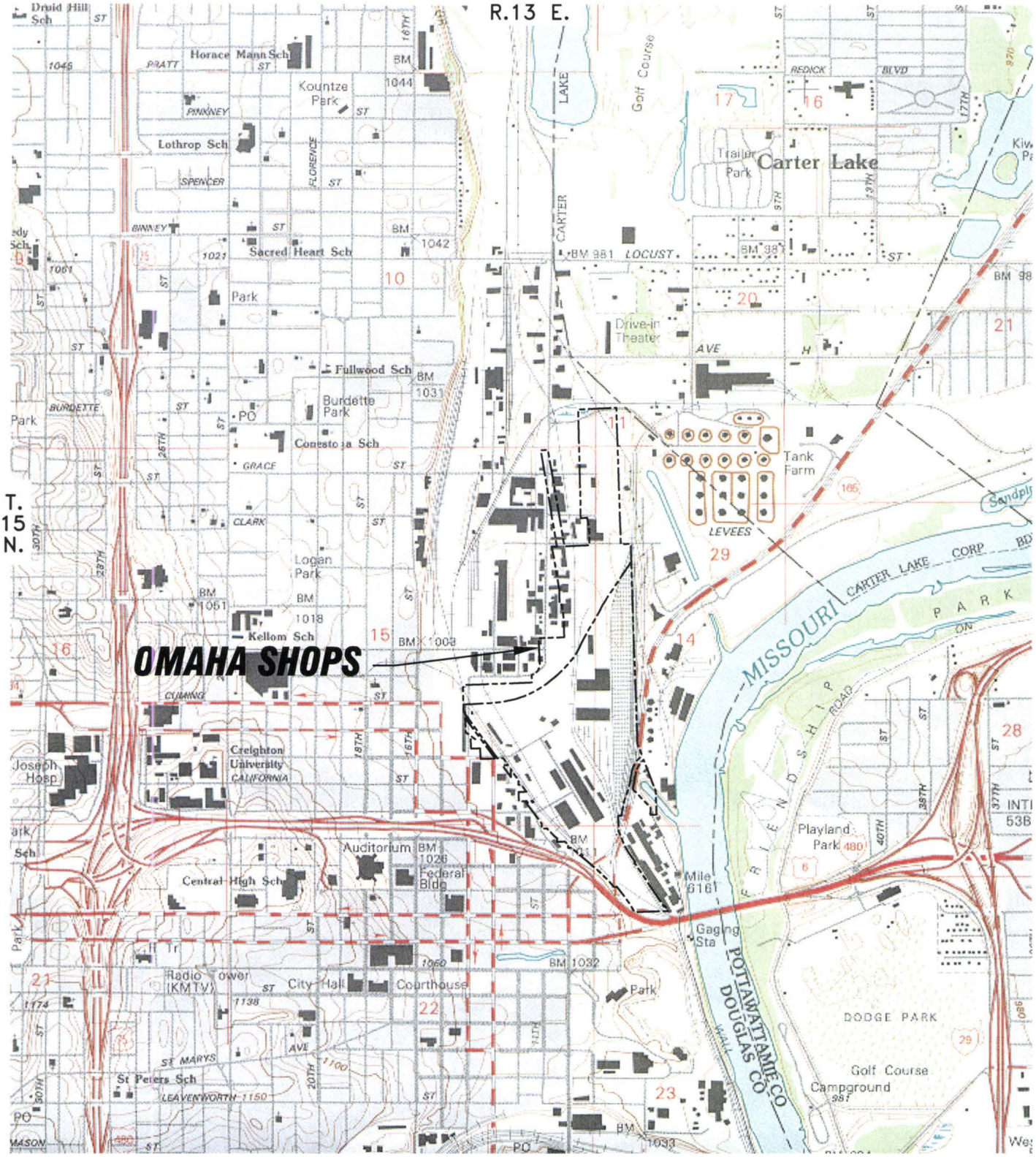
Section 6 -- Summary of Significant Activities: Discusses the major activities and any significant problems.

Section 7 -- Summary of Inspections: Discusses the findings of the periodic inspections.

Section 8 -- Summary of Costs: Provides the costs to complete the monitoring and maintenance portion of the corrective measure.

Section 9 -- Post O&M Contingency Procedures: Describes the procedures for doing invasive work in the embankment.

Section 10 – References.



NEBRASKA

QUADRANGLE LOCATION

BASE MAP SOURCE: USGS 7.5 MINUTE SERIES (TOPOGRAPHIC) QUADRANGLE MAP OF OMAHA NORTH, NE.–IA., 1994.

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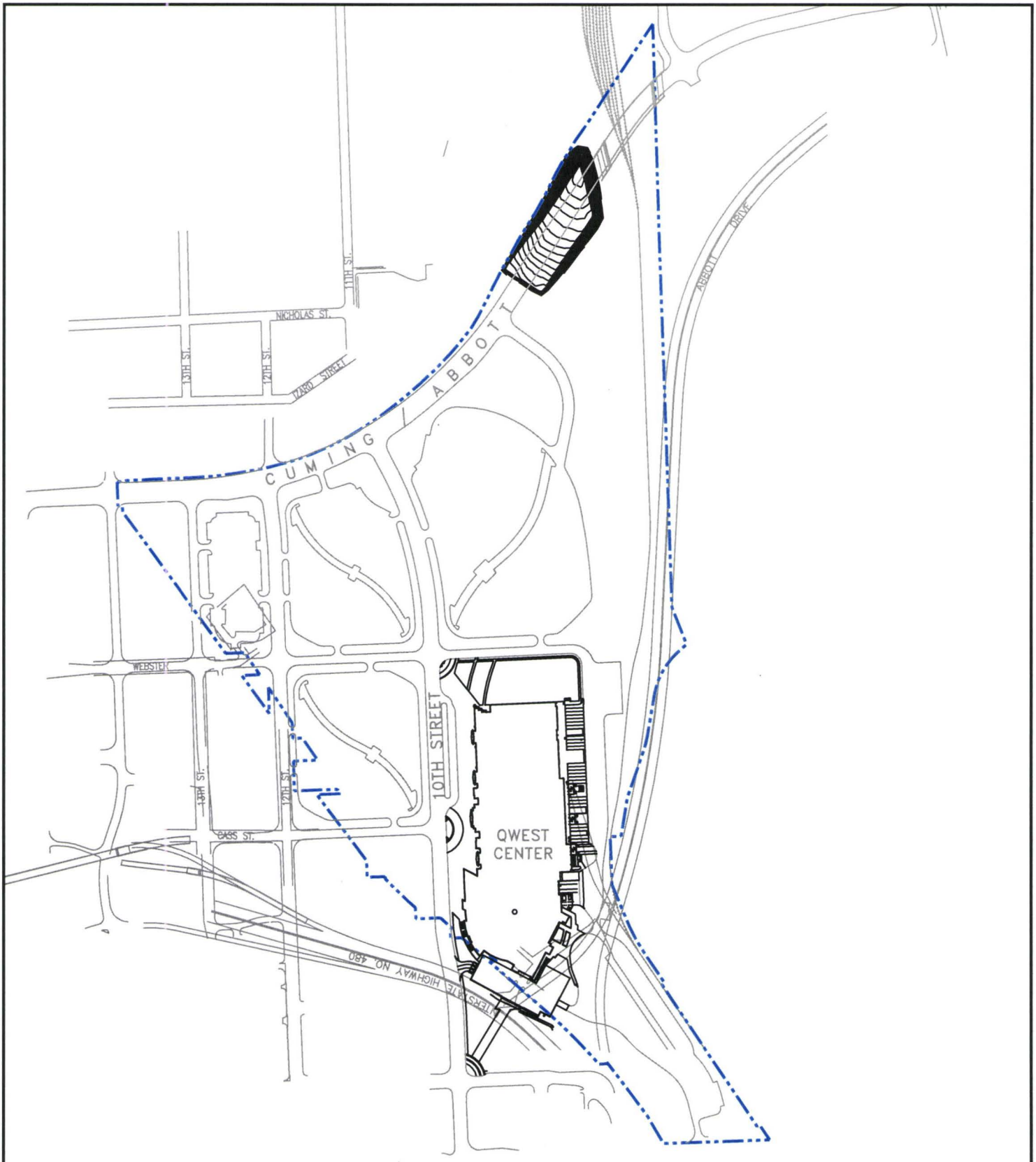
OMAHA SHOPS LOCATION

UNION PACIFIC

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS

DRN BY DAC	DATE 12/16/03	PROJECT NO. 16168949.03600	FIG. NO. 1-1
CHK'D BY	DATE		



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OU1

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OU1 SITE LOCATION PLAN

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

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DRN BY DAC	DATE 04/21/04	PROJECT NO. 16168949.03600	FIG. NO. 1-2
CHK'D BY KJW	DATE 04/21/04		

Surface and shallow soils within OU1 were found to contain lead at levels above the corrective measure objective. The corrective measure at OU1 was implemented to focus on the exposure setting for which protection will be provided. The exposure setting took into account the chemical of potential concern, media of concern, and exposure pathways. The excavation limits encompass the area of contaminated soil found by drilling and soil sampling during the RFI. The corrective measure objectives for OU1 are:

- To reduce the potential for the current occupants, future construction workers, and recreational users to be exposed to site surface and shallow soils with lead levels in excess of 1,218 mg/kg
- To reduce the potential for future construction workers performing intrusive work to come into contact with subsurface soils containing lead in excess of the levels mentioned above
- To ensure the objectives mentioned above are still met after completion of future construction work

2.1 CORRECTIVE MEASURE SUMMARY

The corrective measure, excavation and on-site disposal, consisted of excavating the top 12 inches of site soils in areas that contain greater than 1,218 milligrams per kilogram (mg/kg) of lead except in the area under the proposed Abbott Drive/Cuming Street road embankment. Soils remaining above 1,218 mg/kg during confirmation sampling were excavated below 12 inches to achieve corrective action objectives. The contaminated soil was placed in the Abbott Drive/Cuming Street road embankment.

Drilling and soil sampling information was used to determine the excavation limits. Confirmation soil sampling was collected from the excavation for laboratory analysis to confirm that performance standards had been achieved. The frequency of sampling and testing are detailed in the CMI Work Plan (URS 2000). Final excavation limits were based on achieving performance standards.

The contaminated soils were excavated using standard earthwork equipment capable of excavating to the required depths. Any sewers or other buried utilities that were encountered during excavation were temporarily supported or relocated as necessary to maintain service. Railroad tracks, bridge piers, light poles and all other structures were protected with minimum clearances from excavation. All monitoring wells located within the excavation limits were abandoned by a licensed water well contractor in accordance with Nebraska Title 178.

2.2 CONSTRUCTION SUMMARY

Excavation of Phase I lead impacted soil began with construction of a ramp over the 16-inch water main and concrete removal in the embankment area in June 2000. The excavation of one foot of lead impacted soil was completed in the first portion of the Phase I soils and nine confirmation samples were collected from the excavation on June 21, 2000. Analytical results indicated the southernmost and the northernmost samples exceeded the clean-up criteria of 1,218 mg/kg. Excavation of an additional foot of material from these areas and additional confirmation

samples were collected in July 2000. Analytical results from these confirmation samples indicated that the Phase I soil excavation was below 1,218 mg/kg.

Placement of the temporary winter cover was halted pending the City of Omaha's decision to relocate the Abbott Drive/Cuming Street embankment on August 11, 2000.

A portion of the Phase II lead impacted soil excavation was started to facilitate construction of the new Coal Track along the east property boundary in August 2000. This portion of the project was originally scheduled to take place in the spring of 2001, but old track removal completed ahead of schedule allowed this portion of the work to be completed. Excavation of the first foot of Phase II lead impacted soil in the southwest portion of the project was completed in October 2000. This excavation consisted of three distinct areas and one confirmation sample was collected from each section. The middle section was confirmed "clean" by analytical results in October 2000. The east section was confirmed "clean" by analytical results in November 2000. The west section was confirmed "clean" by analytical results in December 2000. Subsequently, this finished all of the corrective measures work for 2000.

Relocation of the Abbott Drive/Cuming Street embankment was started on April 2, 2001. Prior to moving the embankment, approximately 5,000 cubic yards of asbestos contaminated soils were placed into the northern toe of the new embankment location. The soils were placed with approval from both the USEPA and the Nebraska Department of Environmental Quality (NDEQ). Following relocation of the embankment, the remaining Phase II soils were excavated and placed in the relocated embankment. Relocation of the embankment was completed and confirmation samples were collected from the soil beneath the old embankment in April 2001. Analytical results confirmed that the soils below the old embankment location were below 1,218 mg/kg on May 1, 2001.

Excavation of the remaining Phase II soils were completed and three confirmatory samples were collected on May 2, 2001. Analytical results confirmed that the remaining soils were below 1,218 mg/kg. Subsequently, the clean soil cover on the embankment was started. Placement of the clean soil cover was completed on May 18, 2001, marking the completion of the OU1 Corrective Measure.

This section describes the process and methods for determining when the completion criteria have been met. The corrective measure achieved the corrective measure objectives once the excavation, placement, and covering of the contaminated soils, installation of the pavement, and embankment seeding was completed. In accordance with the Operation and Maintenance Plan, the maintenance and monitoring will cease at the conclusion of one year of monitoring following the placement of the embankment seeding. The following methods were used to document the corrective measure and verify its successful completion.

3.1 VISUAL OBSERVATION

During the implementation of the corrective measure, the site was continuously monitored to verify that the soils from within the excavation limits were removed to the proposed depths and placed in the Abbott Drive/Cuming Street embankment.

3.2 CONFIRMATION SOIL SAMPLING

After the excavation was completed to the proposed limits, confirmation soil samples were collected to verify that excavation activities removed all of the lead-contaminated soil above the 1,218 mg/kg concentration. Each confirmation sample consisted of a 5-point composite sample collected within an approximate 250-foot by 200-foot sampling grid (approximately 50,000 square feet). The composite samples were analyzed for total lead using Method 6010. The confirmation sampling locations were chosen to best represent the lead-contaminated excavation area. In areas where the confirmation samples indicated that contamination in excess of the 1,218 mg/kg was still present, additional soils were excavated and confirmatory samples were recollected.

3.3 OPERATION AND MAINTENANCE REQUIREMENTS

Operation and maintenance (O&M) of the corrective measure began immediately after completion of the corrective measure in accordance with the O&M Plan. The purpose of the O&M is to maintain the integrity of the remediated areas. The O&M requirements included the following:

- Periodic inspections to ensure the cover has not been disturbed, eroded, or otherwise compromised
- Repairs to the cover, as necessary, resulting from erosion, burrowing animals, unauthorized traffic or other damage

This section demonstrates how the corrective measure objectives were met and describes the work completed to satisfy the corrective measure objectives. As described in the O&M Plan, the completion criteria was satisfied upon the completion of the roadway pavement, embankment seeding, and one year of site monitoring following the placement of seed.

4.1 ANALYTICAL RESULTS

The corrective measure objectives were met for OU1 when the excavation of the lead contaminated soils was complete and all confirmatory results indicated that no soil containing greater than 1,218 mg/kg lead remained.

A total of 29 confirmation samples were collected and analyzed for total lead by Method 6010. The results of the analysis are included in Table 4-1 and the locations of the confirmatory samples are shown on Figure 4-1. The concentrations of the confirmation samples ranged from 35 mg/kg to 1,140 mg/kg, indicating that the soil remaining in place satisfies the corrective measure objective of less than 1,218 mg/kg of lead in soil.

4.2 ROAD PAVEMENT PLACEMENT AND EMBANKMENT SEEDING

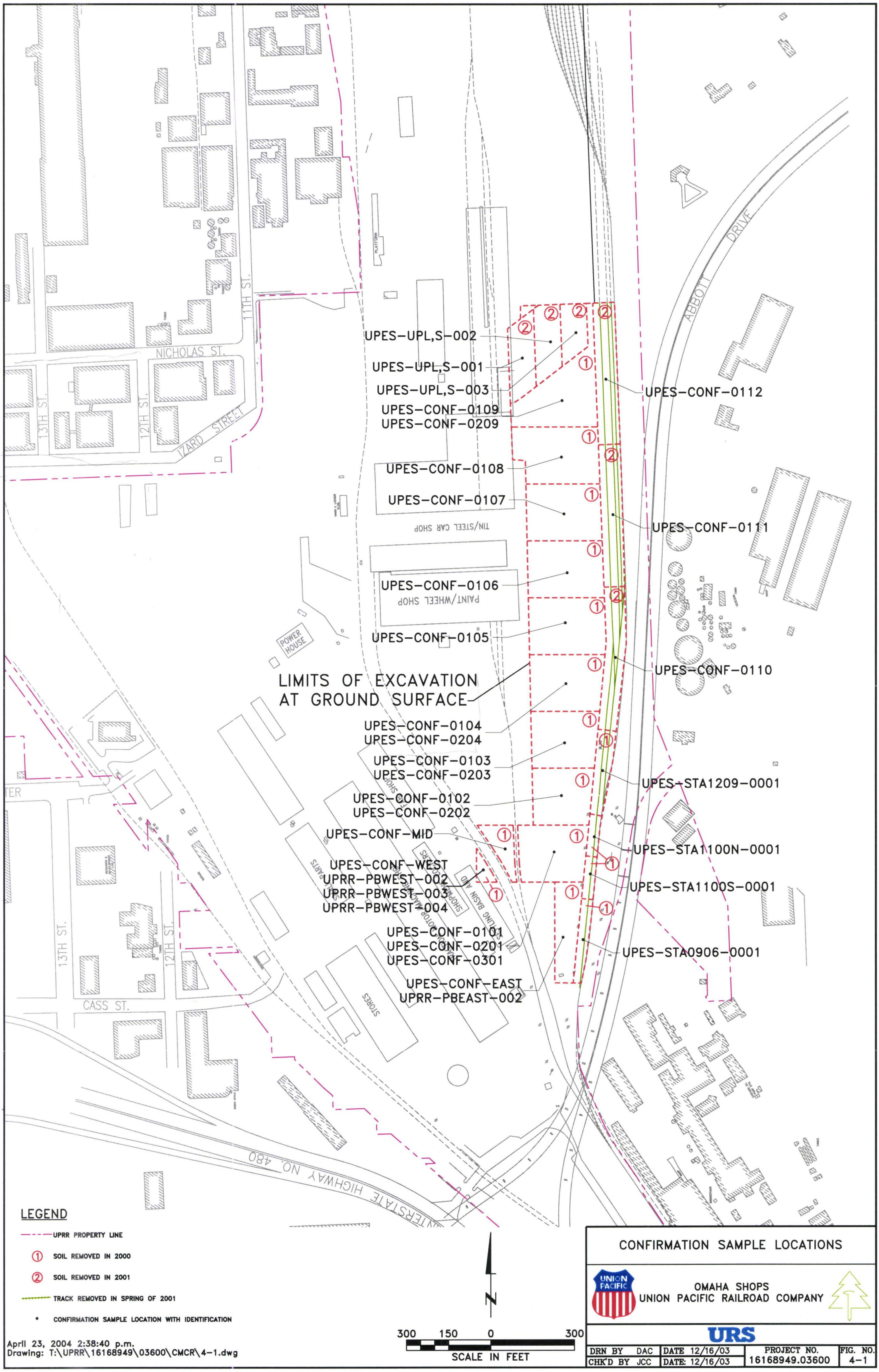
The Abbott Drive/Cuming Street overpass pavement is complete and open to traffic. The embankment was seeded in the summer and fall of 2002.

4.3 POST SEEDING O&M

The site has been inspected semiannually (spring and fall) since 2001, including 1.5 years of inspections since the final placement of the embankment seedbed.

TABLE 4-1
SUMMARY OF CONFIRMATORY SOIL ANALYTICAL RESULTS
OU1 LEAD CORRECTIVE MEASURE
OMAHA SHOPS - OMAHA, NE

Sample Identification	Concentration (mg/kg)	Date	Comments
UPES-CONF-0105	780	6/22/2000	
UPES-CONF-0106	940	6/22/2000	
UPES-CONF-0107	580	6/22/2000	
UPES-CONF-0108	1100	6/22/2000	
UPES-CONF-0202	790	7/19/2000	Second confirmation sample collected from this area. Two feet of soil excavated.
UPES-CONF-0203	417	7/19/2000	Second confirmation sample collected from this area. Two feet of soil excavated.
UPES-CONF-0204	736	7/19/2000	Second confirmation sample collected from this area. Two feet of soil excavated.
UPES-CONF-0209	416	7/19/2000	Second confirmation sample collected from this area. Two feet of soil excavated.
UPES-CONF-0301	31.7	7/31/2000	Third confirmation sample collected from this area. Three feet of soil excavated.
UPES-CONF-MID	1140	10/19/2000	
UPRR-PBEAST-002	788	11/30/2000	Second confirmation sample collected from this area. Two feet of soil excavated.
UPRR-PBWEST-004	104	12/13/2000	Fourth confirmation sample collected from this area. Four feet of soil excavated.
UPRR-UPL,S-001	220	4/27/2001	Original embankment location, west third.
UPRR-UPL,S-002	280	4/27/2001	Original embankment location, middle third.
UPRR-UPL,S-003	110	4/27/2001	Original embankment location, east third.
UPES-CONF-0110	37	5/2/2001	
UPES-CONF-0111	35	5/2/2001	
UPES-CONF-0112	36	5/2/2001	



UPES-UPL,S-002
UPES-UPL,S-001
UPES-UPL,S-003
UPES-CONF-0109
UPES-CONF-0209
UPES-CONF-0112
UPES-CONF-0108
UPES-CONF-0107
UPES-CONF-0111
UPES-CONF-0106
UPES-CONF-0105
UPES-CONF-0110
LIMITS OF EXCAVATION AT GROUND SURFACE
UPES-CONF-0104
UPES-CONF-0204
UPES-CONF-0103
UPES-CONF-0203
UPES-STA1209-0001
UPES-CONF-0102
UPES-CONF-0202
UPES-CONF-MID
UPES-STA1100N-0001
UPES-CONF-WEST
UPRR-PBWEST-002
UPRR-PBWEST-003
UPRR-PBWEST-004
UPES-STA1100S-0001
UPES-CONF-0101
UPES-CONF-0201
UPES-CONF-0301
UPES-STA0906-0001
UPES-CONF-EAST
UPRR-PBEAST-002
NICHOLAS ST.
11TH ST.
13TH ST.
12TH ST.
IZARD STREET
CASS ST.
ABBOTT DRIVE
TIN/STEEL CAR SHOP
PAINT/WHEEL SHOP
POWER HOUSE
PLATFORM
STORES
PARTS
INTERSTATE HIGHWAY NO. 480
LEGEND
UPRR PROPERTY LINE
① SOIL REMOVED IN 2000
② SOIL REMOVED IN 2001
TRACK REMOVED IN SPRING OF 2001
• CONFIRMATION SAMPLE LOCATION WITH IDENTIFICATION
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CONFIRMATION SAMPLE LOCATIONS
UNION PACIFIC
OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY
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DATE 12/16/03
CHK'D BY JCC
DATE: 12/16/03
PROJECT NO. 16168949.03600
FIG. NO. 4-1

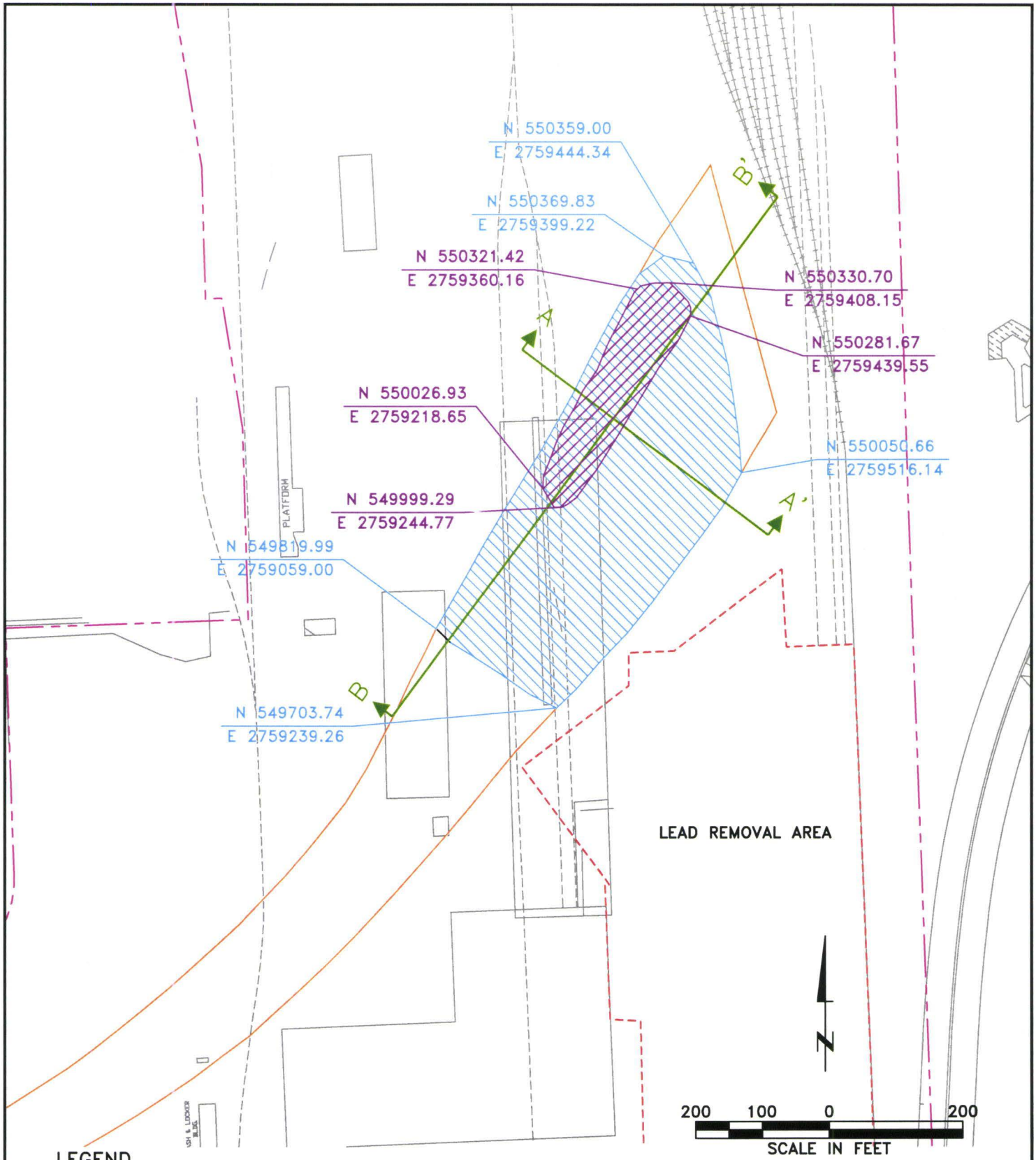
This section summarizes the work accomplishments including the performance level achieved, volume of material removed and the final disposition of the excavated material.

5.1 PERFORMANCE LEVELS

In developing the risk assessment presented in the RFI report (URSGWC 1999), it was assumed that OU1 would be developed as proposed by the City of Omaha into a convention center and arena complex. The corrective measure was designed to provide adequate protection of workers during construction activities and protection of the on-site workers and recreational users of the facility. Protection was achieved by reducing the potential for exposure to site surface and shallow soils with lead levels in excess of 1,218 mg/kg.

5.2 EXCAVATED MATERIAL VOLUME ESTIMATES AND DISPOSITION

An estimated 45,000 cubic yards of lead contaminated soil and 5,000 cubic yards of asbestos containing soil was excavated and placed into the core of the Abbott Drive/Cuming Street embankment. An orange geo-fabric layer was placed over the top of both the lead-contaminated soil and the soil containing asbestos, followed by several feet of clean structural fill and roadway pavement. Survey coordinates for the lead-contaminated soil and asbestos containing soil buried within the embankment are shown on Figure 5-1. Figures 5-2 and 5-3 show typical cross-sections through the Abbott Drive/Cuming Street embankment.



LEGEND

- FORMER UPRR PROPERTY LINE
- LEAD CONTAMINATED SOIL PLACEMENT AREA
- ASBESTOS CONTAMINATED SOIL PLACEMENT AREA
- TOE OF RELOCATED CUMING ST / ABBOTT DRIVE EMBANKMENT
- A A' EMBANKMENT CROSS SECTION LOCATION

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EMBANKMENT LOCATION PLAN

UNION PACIFIC

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

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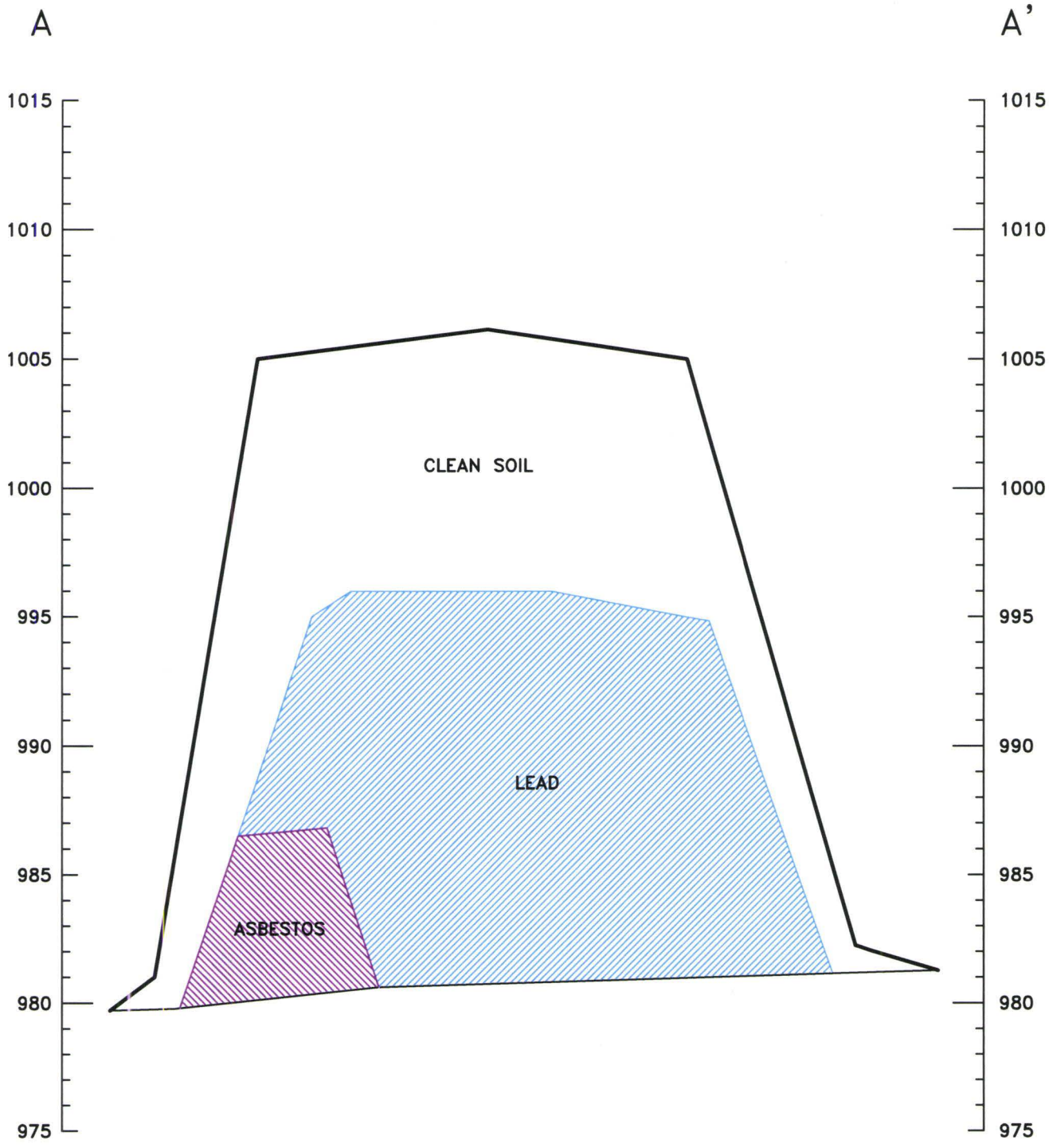
DRN BY DAC	DATE 04/14/04	PROJECT NO. 16168949.03600	FIG. NO. 5-1
CHK'D BY KJW	DATE 04/14/04		



LEAD CONTAMINATED SOIL PLACEMENT AREA

ASBESTOS CONTAMINATED SOIL PLACEMENT AREA

NOTE: ASBESTOS AND LEAD AREAS INCLUDE THE CLEAN COVER MATERIAL

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6 3 0 6
VERTICAL SCALE IN FEET

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EMBANKMENT SECTION A–A'

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

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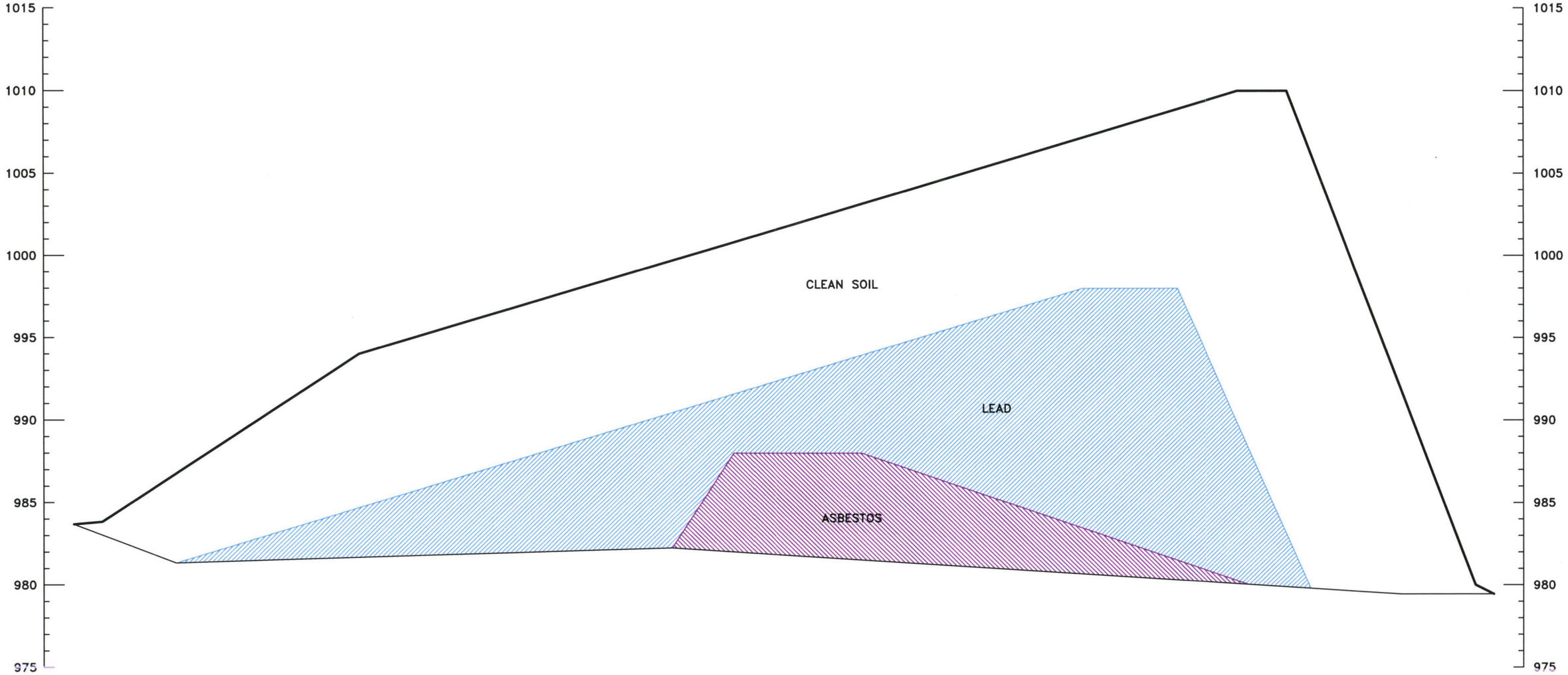
DRN BY DAC	DATE 04/14/04	PROJECT NO.	FIG. NO.
CHK'D BY KJW	DATE 04/14/04	16168949.03600	5-2

B

B'



LEAD CONTAMINATED SOIL PLACEMENT AREA

ASBESTOS CONTAMINATED SOIL PLACEMENT AREA

NOTE: ASBESTOS AND LEAD AREAS INCLUDE THE CLEAN COVER MATERIAL

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EMBANKMENT SECTION B–B'

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

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DRN BY DAC	DATE 04/14/04	PROJECT NO. 16168949.03600	FIG. NO 5–3
CHK'D BY KJW	DATE 04/14/04		

The significant activities, milestones and problems included the following:

- The work was completed in two phases in order to allow UPRR to maintain rail service through the site. Due to the logistics of constructing a new rail yard and removing existing rail yard tracks, the soil beneath the existing tracks to the west was excavated in the spring of 2000, as Phase I.

- The Phase I excavation area was sampled to verify that the lead contaminated soils had been sufficiently removed in accordance with the corrective measure objectives. The results of the confirmatory soil samples indicated that the Phase I portion of the site met the corrective measures objectives in July 2000.

- A portion of Phase II was completed in the summer and fall of 2000. This excavation consisted of three distinct areas and one confirmation sample was collected from each section. The results of the confirmatory samples indicated that this portion of the Phase II met the corrective measure objectives in December 2000.

- Based upon a decision by the City of Omaha and future adjacent property development, the location of the Abbott Drive/Cuming Street embankment was moved to the north. Therefore, the lead contaminated soils that were placed into the embankment, as Phase I, were excavated and placed into the core of the new embankment location.

- Prior to moving the embankment, approximately 5,000 cubic yards of asbestos contaminated soils were placed into the northern toe of the new embankment location. The soils were placed with approval from both the USEPA and the Nebraska Department of Environmental Quality (NDEQ).

- The remainder of the Phase II work was completed in the spring of 2001. Soils beneath the old tracks that had been removed was excavated and placed into the roadway embankment. Confirmatory soil sampling of the Phase II portion of the site indicated that the site met the corrective measures objectives in June 2001.

- After excavation of the Phase I and Phase II soils and placement into the roadway embankment, the entire crest of the embankment was covered with 12 inches of clean fill and the sideslopes were covered with 36 inches of clean fill.

7.1 INSPECTION

The soil cover and sideslopes have been inspected semiannually after completing the placement of the contaminated material and the cover, 1.5 years of which occurred after placement of the embankment seedbed. Each face of the embankment was visually inspected for evidence of erosion cracking, sloughing, animal burrows, settlement, growth of undesirable vegetation or other deleterious condition that may potentially compromise the effectiveness of the cover.

7.2 MAINTENANCE AND REPAIR

Erosion of the sideslopes occurred prior to completing the pavement surface and vegetating the area. Since the embankment required additional soil to achieve the required grades for the road pavement, the City of Omaha's contractor(s) repaired any erosion damage when placing additional soils.

7.3 REPORTING

7.3.1 Inspection Reports

Following each field inspection, a written report was prepared on behalf of UPRR. Each report summarizes the findings of the inspection and is included in Appendix A.

7.3.2 Maintenance and Repair

There was not any maintenance or repair work done by UPRR, therefore no maintenance and repair reports were completed.

7.4 RECOMMENDATIONS

The corrective measure objectives were achieved once the excavation, placement, and covering of the contaminated soils, installation of the pavement, and embankment seeding were completed. In accordance with the Operation and Maintenance Plan, monitoring of the embankment lasted for 1.5 years rather than 1 year due to construction schedules. Based on the activities completed and the information presented in this report, the corrective measure objectives and corrective measure completion criteria have been satisfied for OU1 and provide justification to cease the corrective measure monitoring.

The costs to complete the O&M were limited to the labor required to complete each site inspection of the embankment and complete the inspection form. For the purposes of this section assume that each site inspection, including travel and office time, took about four hours. A total of six inspections at an estimated labor rate of $90 per hour cost about $2,160 to complete the O&M phase of the corrective measure.

The following procedures will be followed associated with future activities at the Abbott Drive/Cuming Street road embankment:

- UPRR must be notified in writing a minimum of twenty (20) business days prior to the start of any intrusive activity.
- The details of the intrusive activity must be provided to UPRR, including the schedule of the intrusive work, type and depth of the intrusive activity, and planned repair or abandonment procedures for the activity. UPRR will notify the USEPA of the proposed activities.
- If problems occur during the intrusive activity requiring changes to the original embankment and soil cover design, the planned changes will be clearly noted on a site plan and the rationale for the design change and necessary actions required to repair or complete the corrective measure will be documented. All planned changes must be sent to UPRR. UPRR will notify the USEPA of the proposed design changes before the changes are implemented. If significant design changes are required, the proposed work may be temporarily stopped until USEPA approval is granted.
- If the intrusive activity extends below the orange geo-fabric used to cover and mark the asbestos- and lead-contaminated soil piles, then the soil disturbed below the fabric must be returned to its original location in the same order as it was removed and must not leave the site. In addition, the identifying orange geo-fabric must be repaired or replaced, the extent of the disturbed location surveyed by a licensed surveyor, and clean backfill material placed. The disturbed area surface will be returned to its original condition including protection from soil erosion and the surface completion will match the original surface (i.e., grass, pavement, etc.).
- The survey information and a Completion Report documenting all aspects of the intrusive activity must be sent to UPRR within 20 days of work completion.

In the event of a major or complete failure of the soil cover, the USEPA will be verbally notified within 24 hours of the event and will receive written notice of the event within 72 hours of the event. The written notice will include the specifics of the event, what response action is being taken or is planned, and any potential impacts on human health or the environment.

Woodward-Clyde (W-C). 1995. Phase II Site Assessment, Construction Area, Omaha Shops. Omaha, Nebraska. December.

Woodward-Clyde (W-C). 1996. Remedial Action Plan, UPRR Omaha Shops, Omaha, Nebraska. August.

URS Greiner Woodward Clyde (URSGWC). 1999. RCRA Facilities Investigation Report, UPRR Omaha Shops, Omaha, Nebraska. June.

URS Greiner Woodward Clyde (URSGWC). 2000. Corrective Measures Study, Operable Unit No. 1 (OU1), UPRR Omaha Shops, Omaha, Nebraska. February.

URS Corporation (URS). 2000. Corrective Measures Implementation Work Plan, Operable Unit No. 1 (OU1), Omaha Shops. Omaha, Nebraska. July.

URS Corporation (URS). 2001. Corrective Measures Implementation Report, Operable Unit No. 1 (OU1), Omaha Shops. Omaha, Nebraska. December.

URS Corporation (URS). 2001. Corrective Measures Implementation Operation and Maintenance Plan, Operable Unit No. 1 (OU1), Omaha Shops. Omaha, Nebraska. October.

FIELD INSPECTION REPORT
ABBOTT DRIVE/CUMING STREET WEST EMBANKMENT

Date: June 6, 2001 Weather: 75°F, Sunny

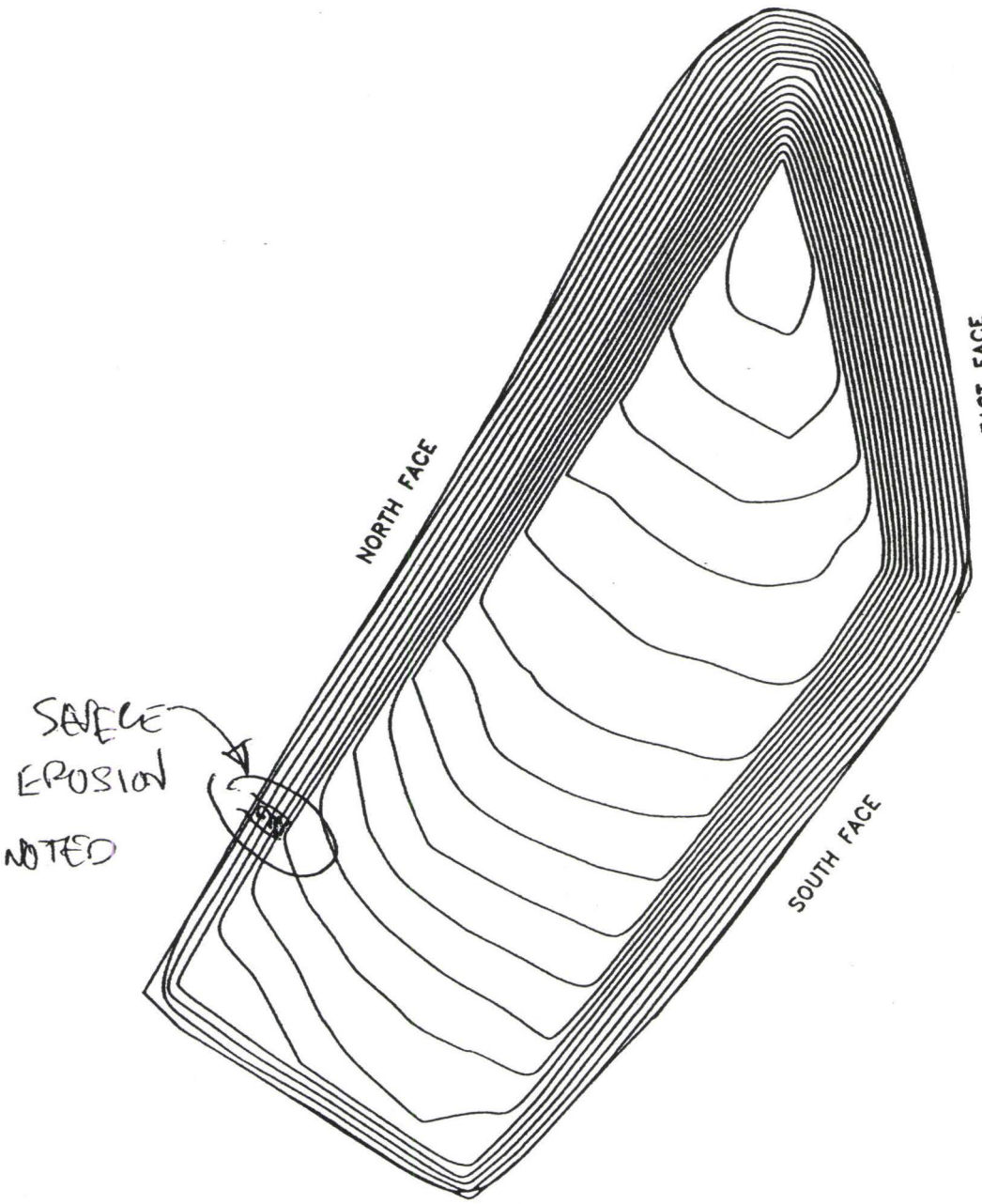
Inspected By: CRP Reviewer: JAS

ITEM	YES*	NO	COMMENTS/RECOMMENDED MAINTENANCE
Cover System - North Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		Topsoil not in place
Loss of Vegetation	N/A		
Animal or Rodent Burrows		X	
Other (Identify)	X		Extreme erosion (down to fabric) on west end
Cover System - East Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		
Loss of Vegetation	N/A		
Animal or Rodent Burrows		X	
Other (Identify)		X	
Cover System - South Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		
Loss of Vegetation	N/A		
Animal or Rodent Burrows		X	
Other (Identify)		X	

Additional Comments or Observations (Attach Additional Pages if Necessary)

Repair of eroded area on North Face needed. See Figure for location.

* - For all items with a "YES" response, show location on an attached site map.



N

100 50 0 100

SCALE IN FEET

LEGEND

RAILROAD TRACK

FIELD INSPECTION SITE MAP

06/06/01

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS

DRN BY DAC	DATE 07/16/01	PROJECT NO. 45-091MC204.02	FIG. NO 1
CHK'D BY	DATE:		

July 16, 2001 11:16:46 a.m.
Drawing: t:\91mc204\sp02\t02400\1.dwg (dac)
Xrefs: uprrpropline2.DWG sdcex2.DWG DRILLHOLES.DWG

FIELD INSPECTION REPORT
ABBOTT DRIVE/CUMING STREET WEST EMBANKMENT

Date: November 15, 2001 Weather: 70°F, P. Cloudy

Inspected By: CRP Reviewer: JAS

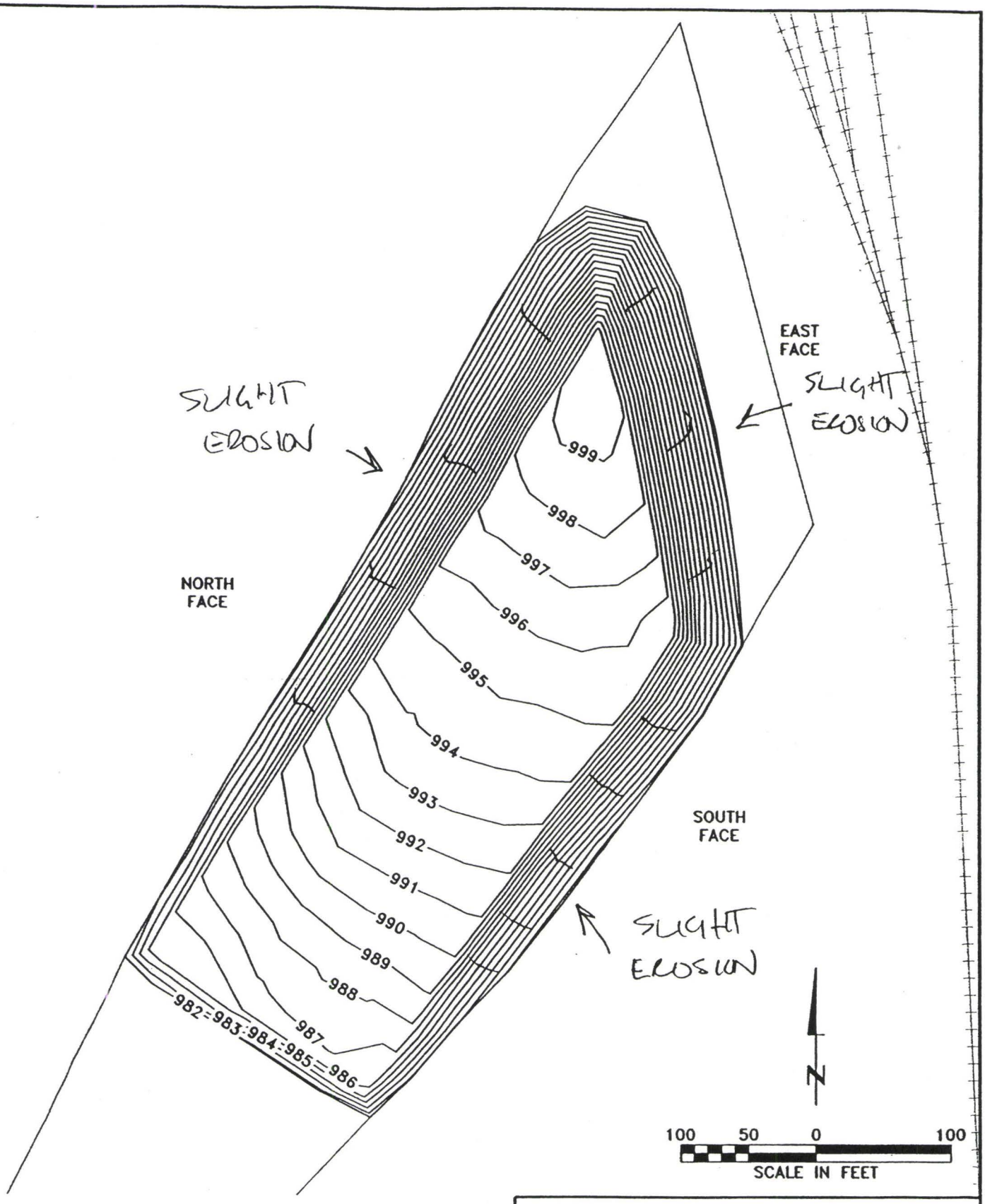
ITEM	YES*	NO	COMMENTS/RECOMMENDED MAINTENANCE
Cover System - North Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		Topsoil not in place
Loss of Vegetation		X	
Animal or Rodent Burrows		X	
Other (Identify)	X		Slight erosion on cover, see below
Cover System - East Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		
Loss of Vegetation		X	
Animal or Rodent Burrows		X	
Other (Identify)	X		See above
Cover System - South Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		
Loss of Vegetation		X	
Animal or Rodent Burrows		X	
Other (Identify)	X		See above

Additional Comments or Observations (Attach Additional Pages if Necessary)

Very minimal erosion from storm runoff, City has placed additional fill.

Erosion has not impacted original protective cover.

* - For all items with a "YES" response, show location on an attached site map.



LEGEND

RAILROAD TRACK

TOE OF CUMING ST / ABBOTT DRIVE EMBANKMENT

October 15, 2001 9:58:12 a.m.
Drawing: t:\91mc204\sp02\t02300\
Xrefs: uprrpropline2.DWG DRILLHOLES.DWG

ABBOTT DRIVE/CUMING STREET
WEST EMBANKMENT

11/15/01

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS

DRN BY DAP	DATE 06/19/01	PROJECT NO.	FIG. NO.
CHK'D BY	DATE:	45-091MC204.02	7-1

FIELD INSPECTION REPORT
ABBOTT DRIVE/CUMING STREET WEST EMBANKMENT

Date: May 15, 2002 Weather: 60°F, Sunny/P. Cloudy

Inspected By: CRP Reviewer: JAS

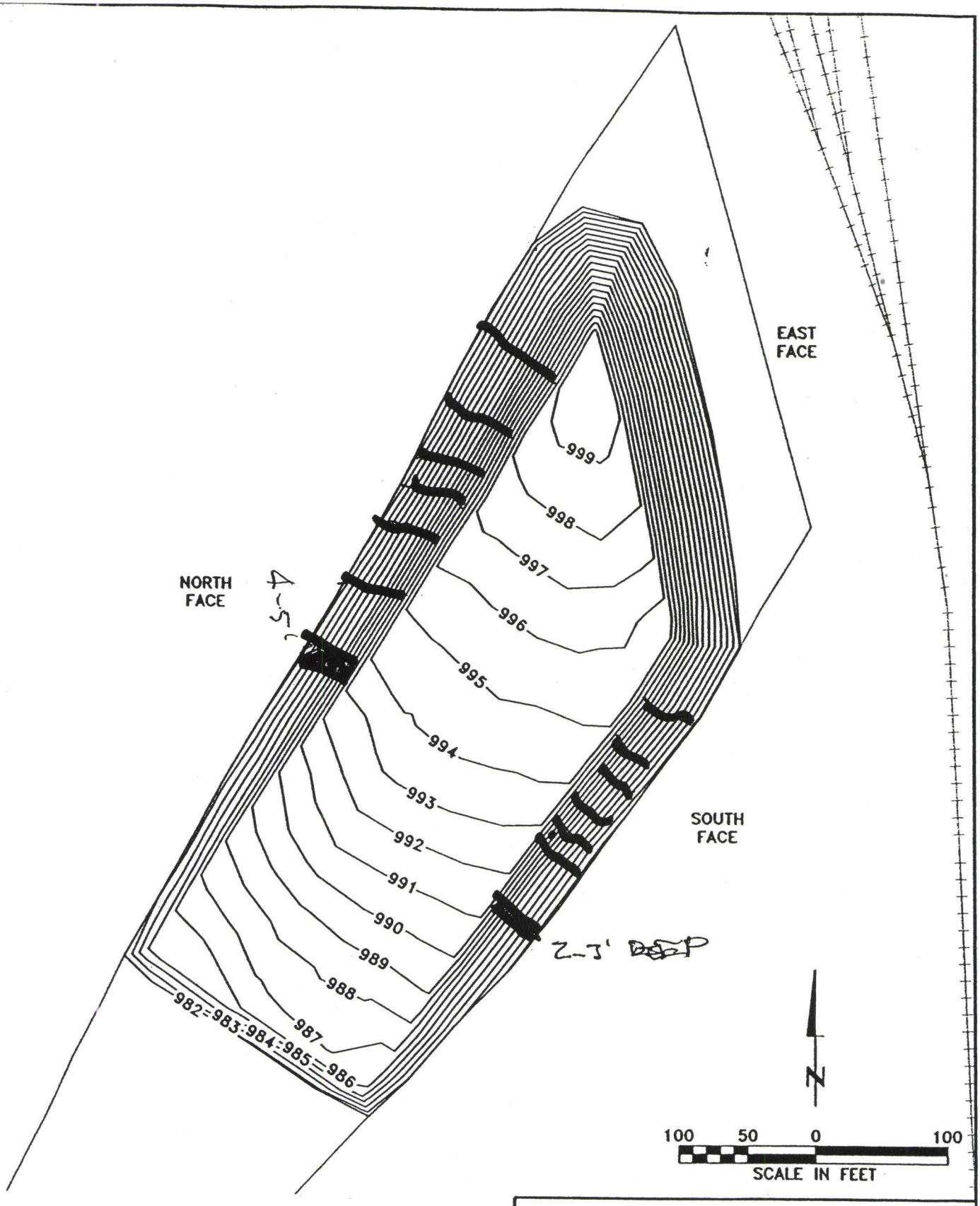
ITEM	YES*	NO	COMMENTS/RECOMMENDED MAINTENANCE
Cover System - North Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		Topsoil not in place
Loss of Vegetation		X	
Animal or Rodent Burrows		X	
Other (Identify)	X		4 to 5 foot deep furrows in fill
Cover System - East Face			Bridge abutment in place
Visible Settlement	N/A		
Ponding	N/A		
Topsoil Erosion	N/A		
Loss of Vegetation	N/A		
Animal or Rodent Burrows	N/A		
Other (Identify)	N/A		
Cover System - South Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	N/A		See above
Loss of Vegetation		X	
Animal or Rodent Burrows		X	
Other (Identify)	X		2 to 3 foot deep furrows in fill

Additional Comments or Observations (Attach Additional Pages if Necessary)

Approximately 15 feet of additional fill has been placed on embankment since May 2001.

Furrowing from rain does not encroach on protective cover.

* - For all items with a "YES" response, show location on an attached site map.



LEGEND

RAILROAD TRACK

TOE OF CUMING ST / ABBOTT DRIVE EMBANKMENT

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ABBOTT DRIVE/CUMING STREET
WEST EMBANKMENT

05/15/02

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS

DRN BY DAP	DATE 06/19/01	PROJECT NO.	FIG. NO.
CHK'D BY	DATE:	45-091MC204.02	7-1

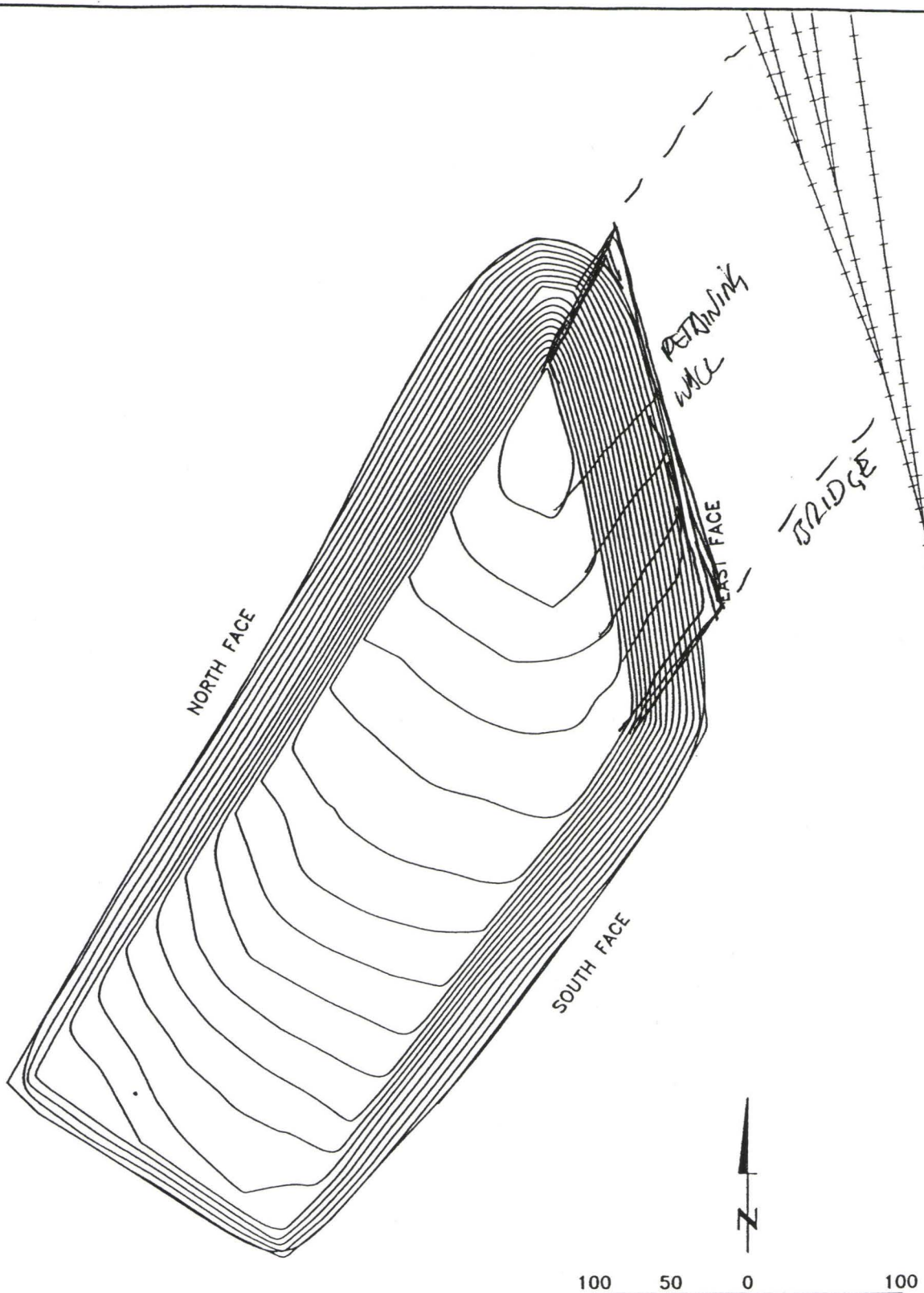
FIELD INSPECTION REPORT
ABBOTT DRIVE/CUMING STREET WEST EMBANKMENT

Date: November 22, 2002 Weather: 55°F, Sunny

Inspected By: CRP Reviewer: JAS

ITEM	YES*	NO	COMMENTS/RECOMMENDED MAINTENANCE
Cover System - North Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion		X	
Loss of Vegetation		X	Vegetation mat/hay has been added by City
Animal or Rodent Burrows		X	
Other (Identify)		X	
Cover System - East Face			
Visible Settlement	N/A		
Ponding	N/A		
Topsoil Erosion	N/A		
Loss of Vegetation	N/A		
Animal or Rodent Burrows	N/A		
Other (Identify)	N/A		
Cover System - South Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion		X	
Loss of Vegetation		X	See above
Animal or Rodent Burrows		X	
Other (Identify)		X	
Additional Comments or Observations (Attach Additional Pages if Necessary)			

* - For all items with a "YES" response, show location on an attached site map.



FIELD INSPECTION SITE MAP
11/22/02

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

LEGEND

RAILROAD TRACK

URS

DRN BY DAC	DATE 07/16/01	PROJECT NO.	FIG. NO.
CHK'D BY	DATE:	45-091MC204.02	1

July 16, 2001 11:16:46 a.m.
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Xrefs: uprrpropline2.DWG sdcex2.DWG DRILLHOLES.DWG

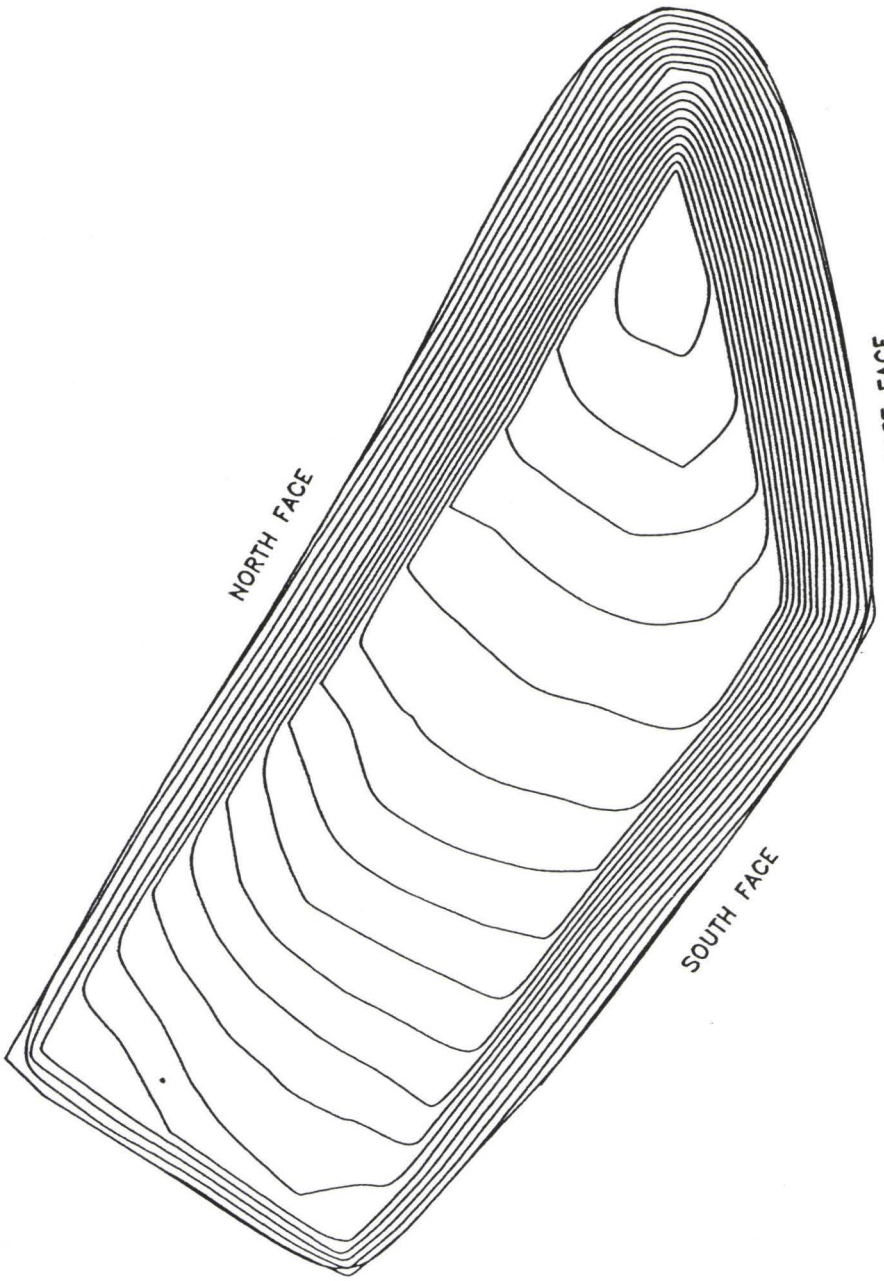
FIELD INSPECTION REPORT
ABBOTT DRIVE/CUMING STREET WEST EMBANKMENT

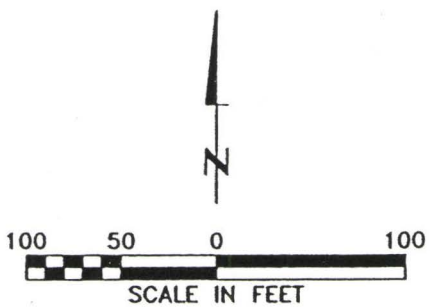
Date: May 9, 2003 Weather: 60°F, Breezy, Sunny

Inspected By: CRP Reviewer: JAS

ITEM	YES*	NO	COMMENTS/RECOMMENDED MAINTENANCE
Cover System - North Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion		X	
Loss of Vegetation		X	
Animal or Rodent Burrows		X	
Other (Identify)			
Cover System - East Face			N/A Bridge Embankment Retaining Wall In Place
Visible Settlement			
Ponding			
Topsoil Erosion			
Loss of Vegetation			
Animal or Rodent Burrows			
Other (Identify)			
Cover System - South Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion		X	
Loss of Vegetation		X	
Animal or Rodent Burrows		X	
Other (Identify)			
Additional Comments or Observations (Attach Additional Pages if Necessary)			
Vegetation well established on embankment face.			
Cuming/Abbott Roadway is open to traffic.			

* - For all items with a "YES" response, show location on an attached site map.





LEGEND

RAILROAD TRACK

FIELD INSPECTION SITE MAP
05/09/03

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS

DRN BY DAC	DATE 07/16/01	PROJECT NO. 45-091MC204.02	FIG. NO. 1
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FIELD INSPECTION REPORT
ABBOTT DRIVE/CUMING STREET WEST EMBANKMENT

Date: November 21, 2003 Weather: 40 F, wind 15 mph, party cloudy

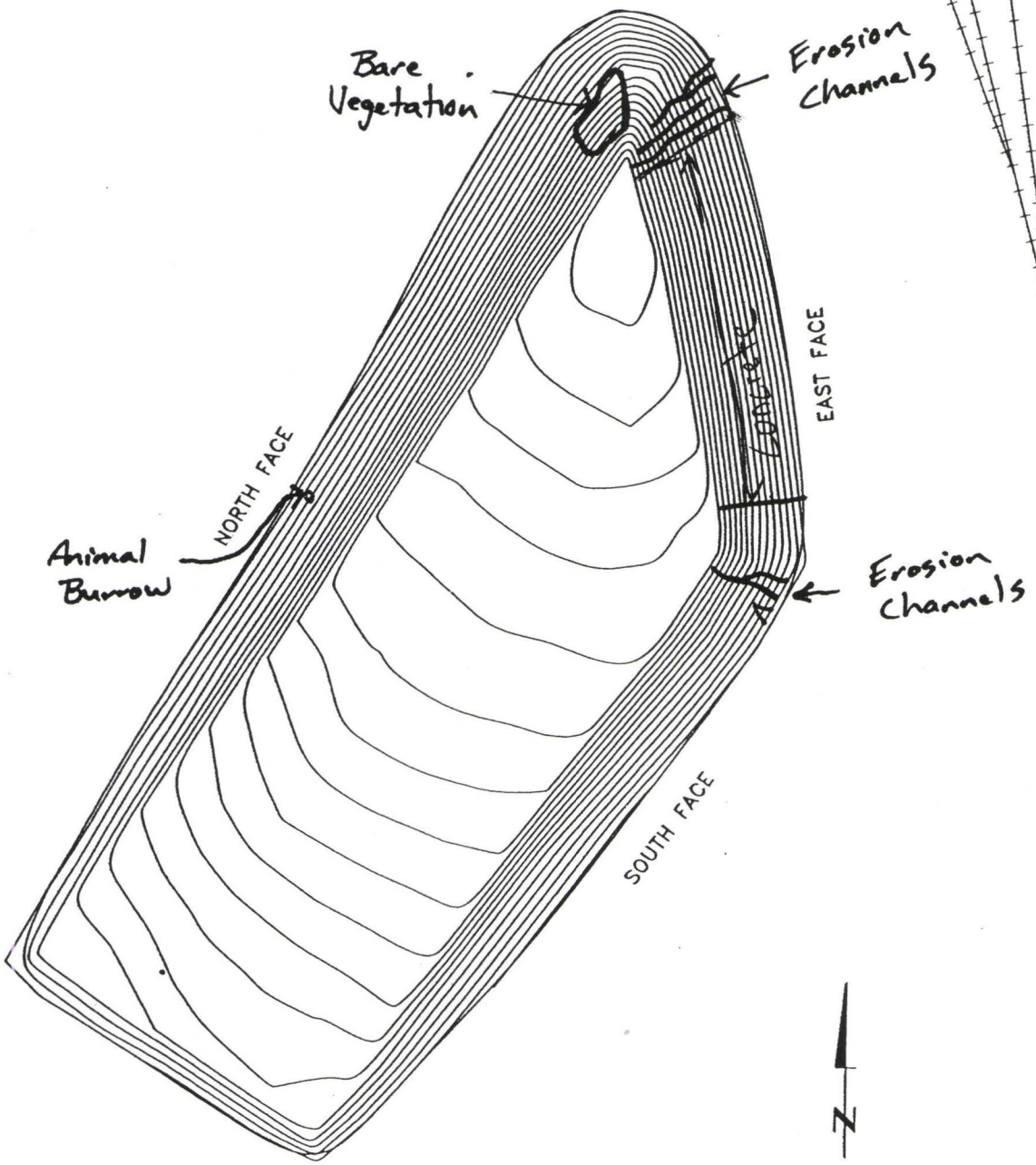
Inspected By: Brian Osborn Reviewer:

ITEM	YES*	NO	COMMENTS/RECOMMENDED MAINTENANCE
Cover System - North Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	X		Minor erosion channels
Loss of Vegetation	X		Vegetation cover <50%
Animal or Rodent Burrows	X		One animal burrow noticed
Other (Identify)			
Cover System - East Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	X		Several erosion channels on north side of concrete
Loss of Vegetation	X		Vegetation is sparse near erosion channels
Animal or Rodent Burrows		X	
Other (Identify)			
Cover System - South Face			
Visible Settlement		X	
Ponding		X	
Topsoil Erosion	X		Four erosion channels
Loss of Vegetation	X		Some bare spots along east end, near erosion channels
Animal or Rodent Burrows		X	
Other (Identify)			

Additional Comments or Observations (Attach Additional Pages if Necessary)

North side of embankment is less than 50% vegetated but erosion is minor. South side is fully vegetated other than east face/south face convergence. East face has several erosion channels, up to 6-inches wide and 4-inches deep. Bare vegetation in eroded areas, specificially adjacent to concrete area.

* - For all items with a "YES" response, show location on an attached site map.



LEGEND

RAILROAD TRACK

FIELD INSPECTION SITE MAP
11/21/03

OMAHA SHOPS
UNION PACIFIC RAILROAD COMPANY

URS

DRN BY DAC	DATE 07/16/01	PROJECT NO.	FIG. NO.
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Xrefs: uprrpropline2.DWG sdcex2.DWG DRILLHOLES.DWG